

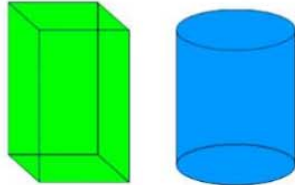
Geometry CC – Mr. Valentino  
 Unit 11 Day 5: Volume of Pyramids and Cones

Name: \_\_\_\_\_  
 Date: \_\_\_\_\_ Per: \_\_\_\_\_

Aim: How can we find the volume of pyramids and cones?

Do Now:

1) Why is the formula for the volume of a prism similar to the formula for the volume of a cylinder?

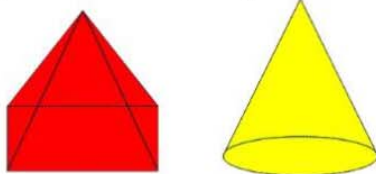


The area of the circle (which is the base of the cylinder) is the B in  $V=Bh$ .

Why is a cylinder not a prism?

It has curved sides.

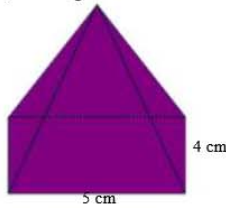
2) How do the formulas for the pyramid and cone compare to the formulas of the prism and cylinder?



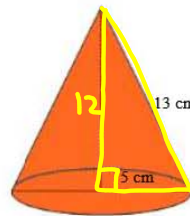
$V$  of a Pyramid =  $\frac{1}{3} Bh$   
 $V$  of a cone =  $\frac{1}{3} \pi r^2 h$

Find the volume of each solid (round to 2 decimal places if necessary).

3) The height is 7 cm.



★ (4)



★ Pythagorean Triples

- ① 3, 4, 5
- ② 5, 12, 13

$$V = \frac{1}{3} Bh$$

$$V = \frac{1}{3} (l \cdot w) h$$

$$V = \frac{1}{3} (5 \cdot 4) \cdot 7$$

$$V = 46.67 \text{ cm}^3$$

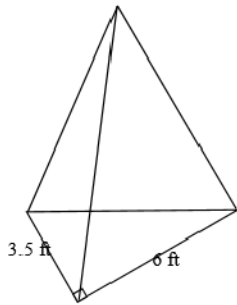
$$V = \frac{1}{3} \pi r^2 h$$

$$V = \frac{1}{3} \pi (5)^2 (12)$$

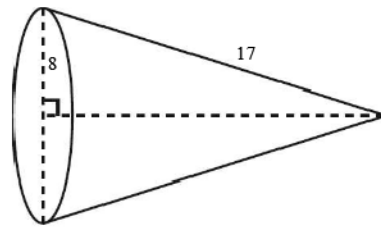
$$V = 314.16 \text{ cm}^3$$

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NORMAL FLOAT AUTO REAL DEGREE MP
(1/3)*5*4*7
46.66666667
(1/3)*pi*5*5*12
314.1592654
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5) The height is 10 ft.



6)



7) What is the volume of a rectangular pyramid whose base has a length of 6.3 cm, a width of 7.4 cm, and whose height is 9.5 cm?

8) What is the volume of a square pyramid whose base has a side length of 13 feet, and whose height is 8 feet?

9) What is the volume of a right circular cone whose height is 15 feet, and whose base has a radius of 6 feet?

10) What is the volume of a right circular cone whose height is 20 feet, and whose base has a diameter of 14 feet?

11) If the volume of a pyramid is  $342 \text{ cm}^3$ , and if the height of the pyramid is 6 units, what is the area of the base?

12) If the volume of a right circular cone is  $192\pi \text{ in}^3$ , and if its height is 9 in, what is the radius of the base?

13) If the volume of a right circular cone is  $96\pi \text{ in}^3$ , and if its height is 8 in, what is the radius of the base?

14) If the volume of a right circular cone is  $1,000 \text{ in}^3$ , and if its radius is 6 in, what is the height in terms of pi?